

**Patent Claims**

1. Method for the transmission of information in various carrier frequencies with a frequency hopping method, comprising the following steps:  
offering (22) a random sequence of a plurality of N possible carrier frequency values  
5 fx in addresses 1 through N of a table (25), whereby the N possible carrier frequency values are divided into n sub-groups;  
periodically repeated readout (30, 36) of at least a part M of the N carrier frequency values fx from the table (25), whereby the carrier frequency values fx within each sub-group are sequentially read out from the corresponding addresses and the sub-  
10 groups are read out in a discontinuous sequence, whereby  $M \leq N$  applies; and  
transmitting (4, 6) information in the corresponding carrier frequencies.

2. Method according to claim 1, characterized in that the step of offering a random sequence of a plurality of N possible carrier frequency values fx in addresses a through N of the table (25) comprises the following steps:  
15 generating (35) a respective random sequence of a plurality k of possible, different carrier frequency values fx for each sub-group;  
writing the random sequence of the k carrier frequency values fx into the corresponding addresses of the respective sub-group of the table, whereby  $k \times n = N$  applies.

20 3. Method according to claim 1 or 2, characterized in that the following steps are implemented for the setup of a connection:  
sampling (31) a carrier frequency;  
deciding (32) whether a specific message was received on this carrier frequency during a specific time span;  
25 when the decision is negative, selecting (34) a new carrier frequency and sampling (31) this new carrier frequency;  
when the decision is positive, editing (36) the table upon employment of the message.

4. Method according to claim 1, 2 or 3, characterized in that the following steps are implemented for the synchronization:  
30 sampling (26) a carrier frequency;  
deciding (27) whether this carrier frequency was received during a specific time span;

when the decision is negative, selecting (28) a new carrier frequency and sampling this new carrier frequency;

when the decision is positive, searching (29) the address in the table corresponding to this carrier frequency and periodically repeated readout (30, 36) of the carrier

5 frequency values  $f_x$  proceeding from this address.

5. Method according to one of the preceding claims, characterized in that a part  $j$  of  $k$  possible carrier frequency values is read out from each sub-group of the table (25), whereby the remaining  $k-j$  carrier frequency values are employed for replacing disturbed carrier frequency values of the  $j$  carrier frequency values in the  
10 respective sub-group, whereby  $j \times n = M$  applies.

6. Method according to claim 5, characterized in that each sub-group of the table is updated from the  $k-j$  carrier frequency values before the periodically repeated read-out upon replacement of the carrier frequency values that correspond to disturbed carrier frequencies.

15 7. Apparatus for the transmission of information in various carrier frequencies with a frequency hopping method, comprising a means (23) for offering a random sequence of a plurality of  $N$  possible carrier frequency value  $f_x$  in addresses 1 through  $N$  of a table (25), whereby the  $N$  possible carrier frequency values are arranged in  $n$  sub-groups;  
20 a means (30, 36) for periodically repeated readout at least a part  $M$  of the  $N$  carrier frequency values  $f_x$  from the table (25), whereby the carrier frequency values within each sub-group are sequentially read out from the corresponding addresses and the sub-groups are read out in a discontinuous sequence, whereby  $M \leq N$  applies; and a means (4, 6) for transmitting information in the corresponding carrier frequencies.

25 8. Apparatus according to claim 7, characterized in that the means for editing a random sequence of a plurality of  $N$  possible carrier frequency values  $f_x$  into addresses 1 through  $N$  of a table (25) comprises:

means (35) for generating a respective random sequence of a plurality  $k$  of possible, different carrier frequency values  $f_x$  for each sub-group;

30 means for writing the random sequence of the  $k$  carrier frequency values  $f_x$  into the corresponding addresses of the respective sub-group of the table.

9. Apparatus according to claim 7 or 8, characterized in that a means for the setup of a connection is provided that comprises:

means (31) for sampling a carrier frequency;

means (32) for deciding whether a specific message was received on this carrier

- 5 frequency during a specific time span, configured such that, when the decision is negative, a new carrier frequency is selected and this new carrier frequency is sampled, and, when the decision is positive, the table is edited upon employment of the message.

- 10 10. Apparatus according to claim 7, 8 or 9, characterized in that a means for synchronization is provided that comprises:
- means (26) for sampling a carrier frequency;
- means (27) for deciding whether this carrier frequency was received during a specific time span, configured such that, when the decision is negative, a new carrier frequency is selected and this new carrier frequency is sampled, and, when the
- 15 decision is positive, the address in the table corresponding to this carrier frequency is sought and the carrier frequency values  $f_x$  are periodically repeatedly read out proceeding from this address.

11. Apparatus according to one of the claims 7 through 10, characterized in that the means (30, 36) for readout reads a part  $j$  of  $k$  possible carrier frequency
- 20 values from each sub-group of the table, whereby the remaining  $k-j$  carrier frequency values are employed for replacing disturbed carrier frequency values of the  $j$  carrier frequency values in the respective sub-group, and whereby  $j \times n = M$  applies.

12. Apparatus according to claim 11, characterized by a means (37, 38) for updating that updates each sub-group of the table from the  $k-j$  carrier frequency
- 25 values before the periodically repeated readout upon replacement of the carrier frequency values that correspond to disturbed carrier frequencies.